

D. Materials Warranty

General Provisions 101 through 150.

888.2.03 Waterproofing Membrane for Retaining Wall Joints**A. Requirements**

1. Use these waterproofing barriers for concrete and other masonry surfaces at locations shown on the plans.
2. Use waterproofing membrane that incorporates a cross-laminated, high density polyethylene film, adhered to a flexible, self-adhesive, rubberized asphalt.
3. Get primer from the membrane manufacturer or an approved equal compatible with the membrane.
4. Use membranes that meet the following requirements when tested with the required test method:

Thickness	0.060 in (1.5 mm) minimum
Thickness of polyethylene film	0.004 in (100 µm) minimum
Tensile strength	250 psi (1.7 MPa) minimum
Ultimate elongation	200% minimum
Permeance-perms grains/ft ² /hr/in Hg (ng/s · m ² · Pa)	0.1 (5.7) maximum
Cycling over crack at –15 °F (–26 °C)	No effect 100 cycles
Puncture resistance	40 lbs (180 N) minimum
Pliability (180° bend over 1 in (25 mm) mandrel at –25 °F (–32 °C))	No cracks

5. Submit a certification from the manufacturer that the physical properties of the membrane meet the Specification according to Subsection 106.05, “Materials Certification.”

B. Fabrication

General Provisions 101 through 150.

C. Acceptance

Test as follows:

Test	Method
Tensile strength	ASTM D 412 (Die C)
Ultimate elongation	ASTM D 412 (Die C)
Permeance	ASTM E 96 Procedure B
Puncture resistance	ASTM E 154
Pliability	ASTM D 146
Cycling over crack	Apply and roll membrane across two primed concrete blocks with no separation between the blocks. Open and close the crack from 0 to 1/4 in (6 mm).

See QPL 22 for membranes that meet the requirements of this Specification.

D. Materials Warranty

General Provisions 101 through 150.

Section 890—Seed and Sod

890.1 General Description

This section includes the requirements for seed and sod.

890.1.01 Related References**A. Standard Specifications**

General Provisions 101 through 150.

B. Referenced Documents

General Provisions 101 through 150.

890.2 Materials**890.2.01 Seed****A. Requirements**

1. Use seed that meets the requirements of the Georgia Seed Laws and Rules and Regulations.
2. The germination, purity, and maximum weeds specified in the Georgia Seed Laws for all seeds used by DOT are:

Germination and hard seed minimum	70%
Purity minimum	90%
Weed seeds maximum	2%
Noxious seeds maximum	300 seeds per lb (660 seeds per kg), subject to the limitations in Table 1

3. Seed Mixture

When seed mixtures are specified, each variety of seed shall be furnished separately and mixed after approval by the Engineer.

Table 1—Noxious Weed List

Name	Limitations
1. Field Bindweed (<i>Convolvulus arvensis</i>)	Prohibited
2. Cocklebur	Prohibited
3. Hedge Bindweed (<i>Convolvulus sepium</i>)	Prohibited
4. Nutgrass (<i>Cyperus Rotundus</i>)	Prohibited
5. Blessed Thistle (<i>Cnicus benedictus</i>)	9 per pound (20 per kg)
6. Wild Onion and/or Wild Garlic (<i>Allium</i> spp.)	27 per pound (60 per kg)
7. Sandbur (<i>Cenchrus pauciflorus</i>)	27 per pound (60 per kg)
8. Johnson Grass (<i>Sorghum halepense</i>)	100 per pound (220 per kg)
9. Wild Mustard and Turnips (<i>Brassica</i> spp.)	27 per pound (60 per kg)
10. Blue Weed (<i>Helianthus ciliaris</i>)	200 per pound (440 per kg)
11. Wild Radish (<i>Raphanus raphanistrum</i>)	27 per pound (60 per kg)
12. Dodders (<i>Cuscuta</i> spp.)	100 per pound (220 per kg)
13. Canada Thistle (<i>Cirsium arvense</i>)	100 per pound (220 per kg)
14. Quack Grass (<i>Agrophron repens</i>)	100 per pound (220 per kg)
15. Russian Knapweed (<i>Centaurea Picris</i>)	100 per pound (220 per kg)
16. Bermuda Grass (<i>Cynodon dactylon</i>)	300 per pound (660 per kg)
17. Cheat or Ches (<i>Bromus secalinus</i> and/or <i>Bromus commutatus</i>)	300 per pound (660 per kg)
18. Darnel (<i>Lolium temulentum</i>)	200 per pound (440 per kg)
19. Cornockle (<i>Agrostemma githago</i>)	100 per pound (220 per kg)

Name	Limitations
20. Horsenettle (<i>Solanum carolinense</i>)	200 per pound (440 per kg)
21. Purple Nightshade (<i>Solanum elaeagnifolium</i>)	200 per pound (440 per kg)
22. Buckhorn Plantain (<i>Plantago lanceolata</i>)	200 per pound (440 per kg)
23. Docks (<i>Rumex</i> spp.)	100 per pound (220 per kg)
24. Giant Foxtail	100 per pound (220 per kg)
25. Sheep sorrel (<i>Rumex acetosella</i>)	200 per pound (440 per kg)
26. Red Rice (<i>Oryza sativa</i> variety)	300 per pound (660 per kg)
27. Sorghum alnum	100 per pound (220 per kg)
Sum Total Noxious Weeds	300 per pound (660 per kg)

B. Fabrication

General Provisions 101 through 150.

C. Acceptance

1. Get approval from the Engineer before sowing seed.
2. Ensure each bag of seed is tagged with an analysis tag showing the results of a test made within 9 months of planting.
 - a. Collect and check the tags to ensure that they show a lot number, a test date within 9 months, and that the seed quality meets the requirements in Table 1 .
 - b. The Georgia Department of Agriculture and the laboratory will randomly sample seed.
3. Even though the Engineer approves the seed, you are still responsible to furnish and sow seed that meets these Specifications at the time of sowing.
4. If the Engineer requires, provide seed samples to the Engineer early enough before seeding to allow further testing before seeding.
5. You may increase the rate of seeding to obtain the minimum pure live seed content specified if a low percentage of germination causes the quality of the seed to fall below the minimum.

NOTE: You may increase the seeding rates if the noxious weed seed per square yard (meter) does not exceed the allowable quantity at the regular rate of seeding.

6. The Department will reject wet, moldy, or otherwise damaged seed.

D. Materials Warranty

General Provisions 101 through 150.

890.2.02 Sod**A. Requirements**

1. Use living, growing sod of the designated species for block or big roll sod. This includes sod that is dormant during the cold or dry season and capable of renewing growth after the dormant period.
2. Obtain all sod from approved nurseries that have a Georgia Live Plant License.
3. Ensure that at least 75 percent of the plants in the sod are of the designated variety of grass.

B. Fabrication

1. Mow grass and weeds to a maximum height of 3 in (75 mm). Rake and remove the grass before cutting the sod.
2. Cut the sod into the following sizes:
 - Block sod—12 in (300 mm) by 22 in (550 mm)
 - Big roll sod—21 in (525 mm) by 52 ft (15.8 m)

Ensure that the sod has at least 1/2 in (15 mm) of soil adhering firmly to the roots.

3. Always exercise care to retain the soil on the roots of the sod during cutting, transporting, and planting. Do not dump the sod from vehicles.

C. Acceptance

The Department will accept the material based on the following:

1. Notify the Engineer to inspect the sod sources before it is harvested.
2. The Engineer will inspect the sod while it is being planted.
3. The Department will reject sod with weeds or other growth or foreign material that may be detrimental to the planting. Sod that is excessively dried out, exposed to heat, or not viable will also be rejected.

Do not assume that an approval of a source means that the material is accepted.

D. Materials Warranty

1. Transplant the sod within 72 hours from the time it is harvested.
2. Sod that is not transplanted within 24 hours shall be kept moist and protected from exposure to heat, direct sunlight, and freezing until it is transplanted. Do not exceed the 72-hour time limit for transplanting all of the harvested sod.
3. Cut and install sod only when the soil moisture conditions are favorable.

Section 891—Fertilizers

891.1 General Description

This section includes the requirements for fertilizers.

891.1.01 Related References

A. Standard Specifications

General Provisions 101 through 150.

B. Referenced Documents

Georgia Plant Food Act

891.2 Materials

891.2.01 Fertilizer

A. Requirements

1. Use fertilizer of the grades specified that meet the requirements of the Georgia Plant Food Act in effect at the date of Advertisement For Bids.
2. Any fertilizer that becomes caked or otherwise damaged, making it unsuitable for use, shall be replaced at the Contractor's expense.

B. Fabrication

General Provisions 101 through 150.

C. Acceptance

The Department will accept fertilizer that meets the above requirements.

D. Materials Warranty

General Provisions 101 through 150.